

## ABSTRACT OF THE DISCLOSURE

A system and method of maintaining consistent cached copies of memory in a multiprocessor system having a main memory, includes a memory directory having entries mapping the main memory, an access history information in the memory directory entries, and a directory cache having records corresponding to a subset of the memory directory entries. The memory directory may be a full map directory having entries mapping all of the main memory or a sparse directory having entries mapping to a subset of the main memory. The method includes the steps of receiving a signal indicating a processor cache miss, retrieving a memory directory entry from the memory directory, updating the access history of the memory directory entry, selecting a directory cache line based on its access history and allocating the directory cache line for replacement, and writing the memory directory entry into the directory cache.